UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,249	04/02/2001	Rahul Sharma	SUNMP006	2037

25920 7590 08/12/2004

MARTINE & PENILLA, LLP
710 LAKEWAY DRIVE
SUITE 170
SUNNYVALE, CA 94085

EXAMINER	
PHAM, CHRYSTINE	
ART UNIT	**PAPER NUMBER**
2122	

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/825,249	SHARMA ET AL.	
	Examiner	Art Unit	
	Chrystine Pham	2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The attempt to incorporate subject matter into this application by reference to various related applications (pg.1 line 10-20, pg.18 line 6-9, and pg.19 line 19-23) is improper because it fails to provide up-to-date status (i.e., application numbers) for these applications.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-5, 8, 18, and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Nally et al. (US 6298478), hereinafter, *Nally et al.*

As per claim 1, *Nally et al.* teach a method (e.g., see Abstract) and system (e.g., see FIG.2 & associated text, see FIG.3 & associated text) for partitioning container-managed state for a Java base application (e.g., see *versions 520-552* FIG.5 & associated text, see FIG.6 & associated text, see FIG.6B & associated text, col.12:39-45), comprising the operations of:

- classifying individual entity bean objects (e.g., see *TX1, TX2, TX3* FIG.6A & associated text) with a particular modular state management type/state management unit (e.g., see *EJB Object 510a* FIG.6A & associated text, see *EJB Object 510* FIG.5 & associated text, col.13:56-58);

- providing a plurality of modular state objects/state partitions (e.g., see *versions 520-522* FIG.5 & associated text, see *TX1* FIG.6A & associated text, col.15:4-6), each state object storing a state (e.g., see *instance data 550* FIG.5 & associated text) of a corresponding entity bean object (e.g., see *EJB 500* FIG.5 & associated text, col.14:19-20, col.13:56-58, col.14:19-20) within a memory address space (e.g., see *memory 230* FIG.2 & associated text, col.8:43-44) of a Java server process (e.g., see *server applications 120, 122* FIG.1 & associated text, see *application server 347* FIG.3 & associated text), wherein each state object is associated with the state management type of the corresponding entity bean object; and
- providing state management for each entity bean object based on the associated state management type using a corresponding state object (e.g., see FIG.5, FIG.6, FIG.7, FIG.8, & associated text, col.15:55-58) .

Nally et al. further teach:

a. the operation of using a control module/repository (maintaining state partition specifications) to manage dynamic partitioning/replication of the state of the application via the state partitions and the state management units (e.g., col.3:62-col.4:1).

b. each state partition allows only one concurrent transaction (e.g., see FIG.4 & associated text, see *version 520* FIG.5 & associated text, see *520a, 521a, 522a* FIG.6A & associated text) to be performed on the entity bean objects within the particular state partition during a given time period (e.g., col.2:64-67, col.3:25-40, col.4:28-30 & 34-35, col.11:55-col.12:10).

As per claim 2, *Nally et al.* teach the method as applied to claim 1, wherein the state management type is a memory replicated (e.g., see *memory 228* FIG.2 &

associated text, col.8:43-45) state management type (e.g., col.2:60-61, col.4:40-43, col.10:33-45, col.17:54-56 *data caching*, col.17:65-col.18:1).

As per claim 3, *Nally et al.* teach the method as applied to claim 1, wherein the state management type is a disk replicated (e.g., see *long term storage 230* FIG.2 & associated text, see *data repository 348* FIG.3 & associated text, col.7:30-33, col.8:32-39) state management type (e.g., col.2:60-61, col.4:40-43, col.10:1-9 and 33-45).

As per claim 4, see claims 1 and 3.

As per claim 5, *Nally et al.* teach the method as applied to claim 4, wherein the state management type identifies a policy for replication of a state object to a particular type of state server (e.g., col.13:37-43, col.14:21-29).

As per claim 8, *Nally et al.* teach the method as applied to claim 1, further comprising the operation of performing lock management using the state objects (e.g., col.3:49-52, col.6:23-42, col.12:11-14, col.19:57-col.20:5, col.20:25-42).

As per claim 18, see claims 1-3.

As per claims 22-24, they recite limitations, which have been addressed in claims 2-3, and 5 respectively, therefore, are rejected for the same reasons as cited in claims 2-3, and 5.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 6-7, 9-17, 21, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nally et al.* as applied to claim 1 above, and further in view of Chung et al. (US 6105148), hereinafter, *Chung et al.*

As per claim 6, *Nally et al.* teach the method as applied in to claim 4. *Nally et al.* do not expressly disclose the state management type identifying a policy for migration of a state object from one server process to another server process. However, *Chung et al.* teach the a method and system for providing different types of state management (e.g., see *volatile state 30 & persistent state 120* FIG.1 & associated text, col.2:6-11, col.5:53-60) for entity bean objects (e.g., FIG.8A & associated text) wherein checkpoints are managed using state objects (e.g., FIG.4 & associated text, col.2:62-66, col.4:50-55, col.8:1-3) and state management unit identifies a particular mechanism for recovery of states for entity bean objects (e.g., col.2:62-66, col.4:50-55), which are migration capable between server processes (e.g., FIG.2 & associated text, col.5:10-13). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of *Chung et al.* into that of *Nally et al.* which would produce the expected result with reasonable success. And the motivation for combining the teachings (hereinafter *N2*) would have been that utilizing state objects in managing checkpoints enables the monitoring and persisting of the states as well as detection of data conflicts which might occur following each checkpointed state, thus, enforcing data consistency and allowing the recovery (based on the methods specified in the recovery mechanism) of the application process to it previous state. Furthermore, it would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made that specifying migration mechanism using state objects within state management

units enables the application in the first processing server to be exported to, installed, and deployed on a second processing server in the event of permanent or long-term hardware failure of the first server.

As per claim 7, 9-12, see claims 1-3 and/or 6.

As per claim 13, see claim 1a.

As per claims 14-15, see claim 1.

6. Claims 16-17, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over *N2* as applied to claim 9, and *Nally et al.* as applied to claim 18 above, and further in view of Apte et al. (US 6269373), hereinafter, *Apte et al.*

As per claim 16, *N2* teach the method as applied to claim 15. *Nally et al.* do not expressly disclose each state partition serializes transactions for entity bean objects within a particular state partition. However, *Apte et al.* disclose a method and system wherein each state partition serialize transactions for entity bean objects within a particular state partition (e.g., col.15:21-27, col.15:67-col.16:5, col.16:57-65). *Apte et al.* further disclose entity bean objects (e.g., see *EJB 1208* FIG.12 & associated text) of the application are partitioned into state partitions during pre-deployment (e.g., see Abstract, *fields 1210-1214* FIG.12 & associated text). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of *Apte et al.* into that of *N2* which would produce the expected result with reasonable success. And the motivation combining the teachings (hereinafter *N3*) would have been that serializing transactions for the entity been objects enables their properties, fields, and states to be saved and restored to and from persistent storage since serialization is a well-known technique of converting information objects into data stream which can be efficiently written to (and later retrieved by deserialization from) storage. Furthermore, it would have been obvious to one of ordinary skill in the pertinent

art at the time the invention was made that partitioning of the entity bean objects during pre-deployment allows for the identification of the different states of the entity bean objects for replication/persistence purposes.

As per claim 17, see claim 1b.

As per claim 19, see claim 16.

As per claim 20, see claim 13.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over *N3* as applied to claim 20 above, and further in view of Savage et al. (US 6604110), hereinafter, *Savage et al.*

As per claim 21, *N3* teach the system as applied to claim 20 wherein the repository manages replication of the state of the Java application during runtime (e.g., see claim 13). *N3* do not expressly disclose the repository manages migration of state of the Java application. However, *Savage et al.* disclose a repository (e.g., see *generic metadata repository 200* FIG.13 & associated text) managing migration of enterprise application data (e.g., see *generate migration specifications 202* FIG.13 & associated text, col.1:22-25 & 52-56, col.21:1-6). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of *Savage et al.* into that of *N3* which would produce the expected result with reasonable success. And the motivation for combining the teachings would have been that a repository, which specifies migration protocol, enables the source application data (e.g., properties, fields, states) persisted in the repository of one operational system to be analyzed in order to generate metadata/migration protocol which would specify how the data on that particular operational system are logically transformed (or made independent) from the underlying operational system model to other logical and physical structure of data warehouses (aligning with target business/enterprise structures) on

other operational systems so that said data can be logically mapped, cross-referenced, or incorporated into diverse type business/enterprise applications.

As per claim 25, see claim 6.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Automatic storage of persistent objects in a relational schema, Bapat (US 5295256)
- Method, data structure, and computer program product for object state storage in a repository, Shutt et al. (US 5905987)
- Network-based intelligent tutoring system, Bell et al. (US 6014134)
- Distributed metadata system and method, Immon et al. (US 6240416)
- Base services patterns in a netcentric environment, Bowman-Amuah (US 6742015)
- Persistent storage of information objects, Schoening et al. (US 6769124)
- Method for managing dynamic relations between objects in dynamic object-oriented languages, Mitchell et al. (US 5872973)
- Registration of object factories under multiple interface names, Frey et al. (US 6418447)
- Delegating instance management functions to underlying resource managers, Frey et al. (US 6560609)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chrystine Pham whose telephone number is 703.605.1219. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q Dam can be reached on 703.305.4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chrystine Pham
Examiner
GAU 2122

TUAN DAM
SUPERVISORY PATENT EXAMINER